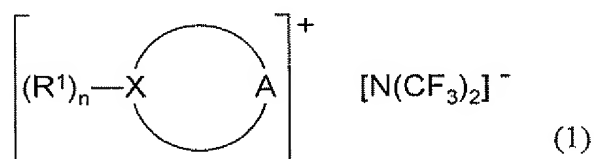


This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1.(Currently amended) A salt of a saturated, partially or fully unsaturated, heterocyclic cation having the bis(trifluoromethyl)imide anion,  $N(CF_3)_2^-$ , which have the formula  
(1)



where

X = N, P, O or S

n = an integer selected from 0, 1 or 2 wherein X is saturated in accordance with its valency increased by 1,

A = a saturated, partially or fully unsaturated 3- to 8-membered hydrocarbon chain,  
in which all carbon atoms apart from one may be replaced by identical or different heteroatoms selected from N, P, O and S,  
where the carbon atoms of the hydrocarbon chain and the heteroatoms present therein are saturated by substituents  $R^2$  in accordance with their valency,

$R^1, R^2 =$  -H, with the proviso that there is no bond to the positively charged heteroatom,  
straight-chain or branched alkyl having 1-20 carbon atoms,  
straight-chain or branched alkenyl having 2-20 carbon atoms and one or more double bonds,  
straight-chain or branched alkynyl having 2-20 carbon atoms and one or more triple bonds,  
saturated, partially or fully unsaturated cycloalkyl having 3-7 carbon

atoms,  
halogen, ~~fluorine or chlorine~~, with the proviso that, for X = N, O, S, there  
is no halogen-heteroatom bond,  
-NO<sub>2</sub>, with the proviso that there is no bond to a positively charged  
heteroatom,  
-CN, with the proviso that there is no bond to a positively charged  
heteroatom,

where the R<sup>2</sup> and/or R<sup>1</sup> in different and/or identical position of the  
heterocyclic ring are in each case identical or different,

where the R<sup>2</sup> and/or R<sup>1</sup> may be connected to one another in pairs by a  
single or double bond,

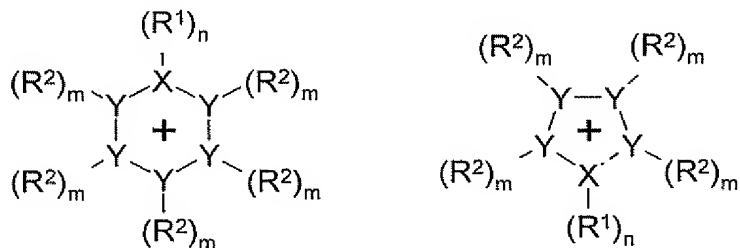
where one or more R<sup>2</sup> and/or R<sup>1</sup> may be partially or fully substituted by  
halogens, or partially by -CN or -NO<sub>2</sub>, with the proviso that not all R<sup>2</sup> and  
R<sup>1</sup> are fully halogenated,

and where one or two carbon atoms of the R<sup>1</sup> and/or R<sup>2</sup> may be replaced by  
heteroatoms and/or atomic groups selected from the group -O-, -C(O)-,  
C(O)O-, -S-, -S(O)-, -SO<sub>2</sub>-, -SO<sub>2</sub>O-, -N=, -P=, -NH-, -PH-, -NR'- and  
-PR'- where R' = non-, partially or perfluorinated C<sub>1</sub>- to C<sub>6</sub>-alkyl or -C<sub>6</sub>F<sub>5</sub>,  
where the α-position of the R<sup>1</sup> is not replaced for X = O, S.

2. ( Previously presented) A salt according to Claim 1, in which A is a 4-, 5- or  
6-membered hydrocarbon chain.
3. ( Previously presented) A salt according to Claim 1 in which A is a hydrocarbon  
chain in which zero, one or two carbon atoms are replaced by heteroatoms selected  
from N, P, O and S.
4. ( Currently amended) A salt according to Claim 1, in which  
R<sup>1</sup>, R<sup>2</sup>, independently of one another, have the meaning  
-H, with the proviso that there is no bond to the positively charged heteroatom,  
halogen, ~~in particular fluorine~~, with the proviso that for X = N, O, S, there is no  
halogen-heteroatom bond,  
straight-chain or branched alkyl having 1-6 carbon atoms, straight-chain or branched,

partially or perfluorinated alkyl having 1-6 carbon atoms.

5. (Previously presented) A salt according to Claim 1, in which the saturated, partially or fully unsaturated, heterocyclic cation is selected from the following group:



where

X = N, P, O or S

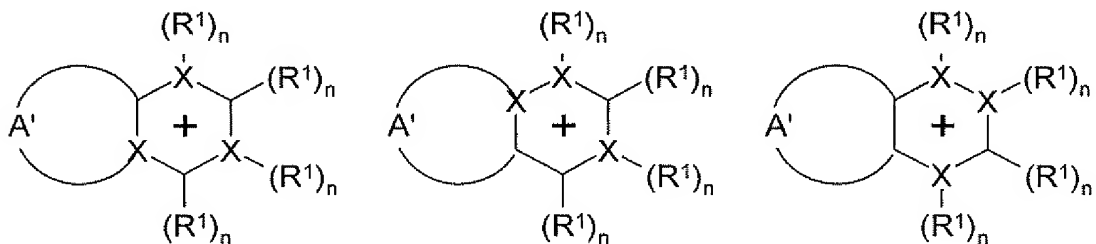
Y = in each case, independently of one another, N, P, O, S or C,  
where at least one Y = C

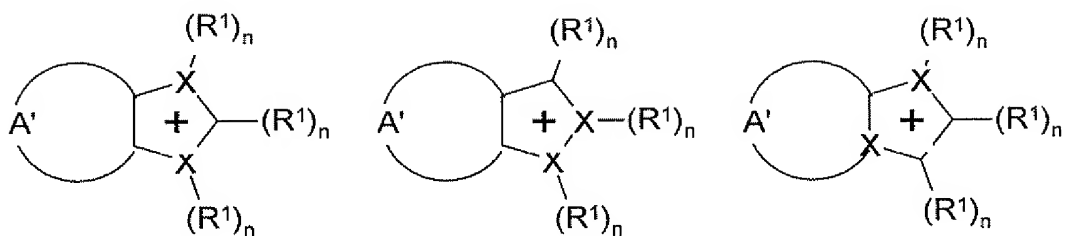
n = 0 for unsaturated X = O, S  
1 for saturated X = O, S or for unsaturated X = N, P  
2 for saturated X = N, P

m = 0 for saturated Y = O, S or for unsaturated Y = N, P  
1 for saturated Y = N, P or for Y =  $sp^2$ -C  
2 for Y =  $sp^3$ -C

where the radicals  $R^1$ ,  $R^2$  are as defined in Claim 1.

6. (Previously presented) A salt according to Claim 1, in which the saturated, partially or fully unsaturated, heterocyclic cation is selected from the following group:





where

X = in each case, independently of one another, N, P, O, S or C,  
where at least one X = N, P, O or S

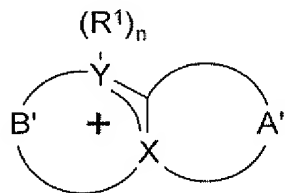
n = 0 for saturated X = O, S or for unsaturated X = N, P  
1 for saturated X = N, P or for X = sp²-C  
or for substitution on the sp² ring carbon atom  
2 for X = sp³-C  
or for substitution on the sp³ ring carbon atom

where n is increased by 1 for one X = N, P, O or S

A' = saturated, partially or fully unsaturated 2- to 7-membered hydrocarbon  
chain,  
where the carbon atoms of the hydrocarbon chain are saturated by  
substituents R² in accordance with their valency

where the radicals R¹, R² are as defined in Claim 1, with the proviso that the  
substituents R¹ in the α-position to the positively charged heteroatom do not have a  
methylene group directly adjacent to the heterocyclic ring.

7. (Previously presented) A salt according to Claim 1, in which the saturated, partially  
or fully unsaturated, heterocyclic cation has the following structure



where

X = N or P

Y = N, P, O or S

n = 0 for Y = O, S  
1 for Y = N, P

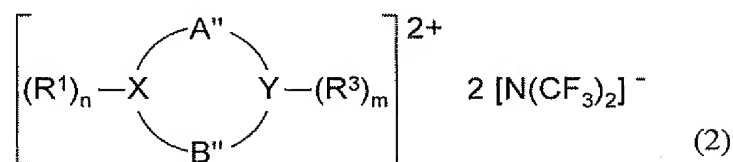
A' = saturated, partially or fully unsaturated 2- to 7-membered hydrocarbon chain,

B' = saturated, partially or fully unsaturated 1- to 6-membered hydrocarbon chain,

where all carbon atoms of the hydrocarbon chains A' and B' apart from one may be replaced by identical or different heteroatoms selected from N, P, O and S  
and where the carbon atoms of the hydrocarbon chains A' and B' are saturated by substituents R<sup>2</sup> in accordance with their valency

and where the radicals R<sup>1</sup>, R<sup>2</sup> are as defined in Claim 1.

8. (Currently amended) A salt of saturated, partially or fully unsaturated, heterocyclic di-cations having the bis(trifluoromethyl)imide anion, N(CF<sub>3</sub>)<sub>2</sub><sup>-</sup>, which have the ~~general~~ formula (2)



where

X, Y = each, independently of one another, N, P, O or S

n, m = an integer selected from 0, 1 or 2 in such a way that X and Y are each saturated in accordance with their valency increased by 1,

A'', B'' = saturated, partially or fully unsaturated 0- to 4-membered hydrocarbon chain,  
 in which the carbon atoms may be replaced by identical or different heteroatoms selected from N, P, O and S,  
 where at least one carbon atom is present in the chains A'' and B'' together and  
 where the carbon atoms of the hydrocarbon chains A'' and B'' and the heteroatoms present therein are saturated by substituents R<sup>2</sup> in accordance with their valency,

R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup> = -H, with the proviso that there is no bond to the positively charged heteroatom,  
 straight-chain or branched alkyl having 1-20 carbon atoms,  
 straight-chain or branched alkenyl having 2-20 carbon atoms and one or more double bonds,  
 straight-chain or branched alkynyl having 2-20 carbon atoms and one or more triple bonds,  
 saturated, partially or fully unsaturated cycloalkyl having 3-7 carbon atoms,  
 halogen, ~~fluorine or chlorine~~, with the proviso that, for X, = N, O, S, there is no halogen-heteroatom bond,  
 -NO<sub>2</sub>, with the proviso that there is no bond to a positively charged heteroatom,  
 -CN, with the proviso that there is no bond to a positively charged heteroatom,

where the R<sup>1</sup>, R<sup>2</sup> and/or R<sup>3</sup> in different and/or identical position of the heterocyclic ring are in each case identical or different,

where the R<sup>1</sup>, R<sup>2</sup> and/or R<sup>3</sup> may be connected to one another in pairs by a single or double bond,

where one or more R<sup>1</sup>, R<sup>2</sup> and/or R<sup>3</sup> may be partially or fully substituted by a halogen, ~~-F and/or -Cl~~, or partially by -CN or -NO<sub>2</sub>, with the proviso

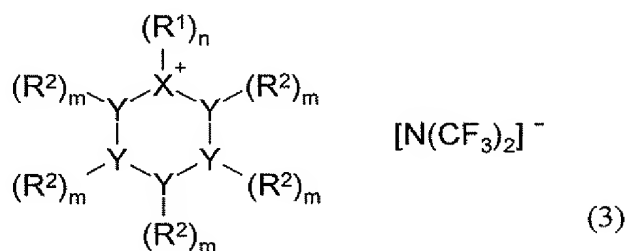
that that not all  $R^1$ ,  $R^2$  and  $R^3$  are fully halogenated,

and where one or two carbon atoms of the  $R^1$ ,  $R^2$  and/or  $R^3$  may be replaced by heteroatoms and/or atomic groups selected from the group -O-, -C(O)-, C(O)O-, -S-, -S(O)-, -SO<sub>2</sub>-, -SO<sub>2</sub>O-, -N=, -P=, -NH-, -PH-, -NR'- and -PR'- where  $R'$  = non-, partially or perfluorinated C<sub>1</sub>- to C<sub>6</sub>-alkyl or -C<sub>6</sub>F<sub>5</sub>, where the  $\alpha$ -positions of the  $R^1$  and of the  $R^3$  are not replaced for X = O, S or Y = O, S,

where the heterocyclic di-cation is a 4-, 5-, 6-, 7-, 8- or 9-membered ring.

9. (Previously presented) A salt according to Claim 8, in which the heterocyclic di-cation is a 5-, 6- or 7-membered ring.

10. (Currently amended) A salt of saturated, partially or fully unsaturated, heterocyclic cations having the bis(trifluoromethyl)imide anion,  $N(CF_3)_2^-$ , which have the formula (3)



where

X, Y = each, independently of one another, N, P, O or S

n = an integer selected from 0, 1 or 2 in such a way that X is saturated in accordance with its valency increased by 1,

m = an integer selected from 0, 1 or 2 in such a way that Y is saturated in accordance with its valency,

$R^1$ ,  $R^2$  = -H, with the proviso that there is no bond to the positively charged

heteroatom,  
 straight-chain or branched alkyl having 1-20 carbon atoms  
 straight-chain or branched alkenyl having 2-20 carbon atoms and one or  
 more double bonds  
 straight-chain or branched alkynyl having 2-20 carbon atoms and one or  
 more triple bonds  
 saturated, partially or fully unsaturated cycloalkyl having 3-7 carbon atoms,  
 halogen, ~~chlorine~~, with the proviso that, for X, = N, O, S, there is no  
 halogen-heteroatom bond,  
 -OR, with the proviso that the substituted heteroatom is not O or S,

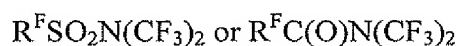
where the R<sup>2</sup> and/or R<sup>1</sup> in different and/or identical position of the  
 heterocyclic ring are in each case identical or different,

where the R<sup>2</sup> and/or R<sup>1</sup> may be connected to one another in pairs by a single  
 or double bond,

where one or more R<sup>2</sup> and/or R<sup>1</sup> may be partially or fully substituted by a  
 halogen, ~~F and/or Cl~~, or partially by -CN or -NO<sub>2</sub>, with the proviso that not  
 all R<sup>2</sup> and R<sup>1</sup> are fully halogenated,

and where one or two carbon atoms of the R<sup>1</sup> and/or R<sup>2</sup> may be replaced by  
 heteroatoms and/or atomic groups selected from the group -O-, -C(O)-,  
 C(O)O-, -S-, -S(O)-, -SO<sub>2</sub>-, -SO<sub>2</sub>O-, -N=, -P=, -NH-, -PH-, -NR'- and -PR'-  
 where R' = non-, partially or perfluorinated C<sub>1</sub>- to C<sub>6</sub>-alkyl or -C<sub>6</sub>F<sub>5</sub>, where  
 the α-position of the R<sup>1</sup> is not replaced for X = O, S.

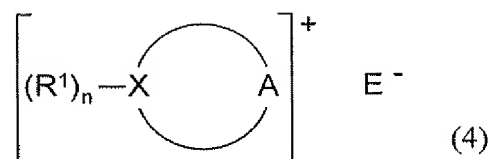
11. (Currently amended) A process for the preparation of salts according to Claim 1,  
 wherein an alkali metal fluoride of the ~~general~~ formula DF, where D selected from the  
 group of the alkali metals, is reacted in a polar organic solvent with



where R<sup>F</sup> = F or C<sub>p</sub>F<sub>2p+1</sub>, where p = 1 – 8,

and a salt of formula (4)





where

$E^- =$   $F^-$ ,  $Cl^-$ ,  $Br^-$ ,  $I^-$ ,  $BF_4^-$ ,  $ClO_4^-$ ,  $AsF_6^-$ ,  $SbF_6^-$ ,  $SbCl_6^-$ ,  $PF_6^-$ ,  $R^F SO_3^-$ ,  $FSO_3^-$ ,  $(R^F)_2 P(O)O^-$ ,  $R^F P(O)_2 O^-$ ,  $RSO_3^-$ ,  $ROSO_3^-$ ,  $\frac{1}{2} SO_3^{2-}$ ,  $CN^-$ ,  $SCN^-$ ,  $R^F C(O)O^-$ ,  $RC(O)O^-$ , 2,4-dinitrophenolate or 2,4,6-trinitrophenolate, where  $R^F$  is a perfluorinated  $C_1$  to  $C_8$ -alkyl group or perfluorinated aryl group and  $R$  is a  $C_1$  to  $C_8$ -alkyl group or aryl group

$X =$  N, P, O or S

$n =$  an integer selected from 0, 1 or 2 in such a way that X is saturated in accordance with its valency increased by 1,

$A =$  a saturated, partially or fully unsaturated 3- to 8-membered hydrocarbon chain,  
in which all carbon atoms apart from one may be replaced by identical or different heteroatoms selected from N, P, O and S,  
where the carbon atoms of the hydrocarbon chain and the heteroatoms present therein are saturated by substituents  $R^2$  in accordance with their valency,

$R^1, R^2 =$  -H, with the proviso that there is no bond to the positively charged heteroatom,  
straight-chain or branched alkyl having 1-20 carbon atoms  
straight-chain or branched alkenyl having 2-20 carbon atoms and one or more double bonds  
straight-chain or branched alkynyl having 2-20 carbon atoms and one or more triple bonds  
saturated, partially or fully unsaturated cycloalkyl having 3-7 carbon atoms  
halogen, ~~fluorine or chlorine~~, with the proviso that, for  $X = N, O, S$ , there is no halogen-heteroatom bond,

-NO<sub>2</sub>, with the proviso that there is no bond to a positively charged heteroatom,  
 -CN, with the proviso that there is no bond to a positively charged heteroatom,

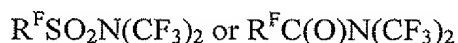
where the R<sup>2</sup> and/or R<sup>1</sup> in different and/or identical position of the heterocyclic ring are in each case identical or different,

where the R<sup>2</sup> and/or R<sup>1</sup> may be connected to one another in pairs by a single or double bond,

where one or more R<sup>2</sup> and/or R<sup>1</sup> may be partially or fully substituted by a halogen -Cl, -CN or -NO<sub>2</sub>, with the proviso that not all R<sup>2</sup> and R<sup>1</sup> are fully halogenated,

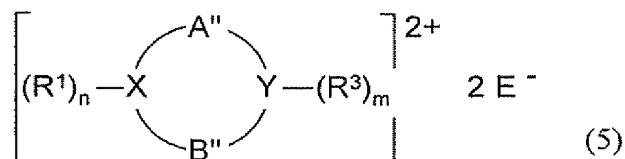
and where one or two carbon atoms of the R<sup>1</sup> and/or R<sup>2</sup> may be replaced by heteroatoms and/or atomic groups selected from the group -O-, -C(O)-, C(O)O-, -S-, -S(O)-, -SO<sub>2</sub>-, -SO<sub>2</sub>O-, -N=, -P=, -NH-, -PH-, -NR'- and -PR'- where R' = non-, partially or perfluorinated C<sub>1</sub>- to C<sub>6</sub>-alkyl or -C<sub>6</sub>F<sub>5</sub>, where the α-position of the R<sup>1</sup> is not replaced for X = O, S.

12. (Currently amended) A process for the preparation of salts according to Claim 8, wherein an alkali metal fluoride of the general formula DF, where D selected from the group of the alkali metals, is reacted in a polar organic solvent with



where R<sup>F</sup> = F or C<sub>p</sub>F<sub>2p+1</sub>, where p = 1 – 8,

and a salt of the general formula (5)



where

- $E^- =$   $F^-$ ,  $Cl^-$ ,  $Br^-$ ,  $I^-$ ,  $BF_4^-$ ,  $ClO_4^-$ ,  $AsF_6^-$ ,  $SbF_6^-$ ,  $SbCl_6^-$ ,  $PF_6^-$ ,  $R^F SO_3^-$ ,  $FSO_3^-$ ,  $(R^F)_2P(O)O^-$ ,  $R^F P(O)_2O^-$ ,  $RSO_3^-$ ,  $ROSO_3^-$ ,  $\frac{1}{2}SO_3^{2-}$ ,  $CN^-$ ,  $SCN^-$ ,  $R^F C(O)O^-$ ,  $RC(O)O^-$ , 2,4-dinitrophenolate or 2,4,6-trinitrophenolate, where  $R^F$  is a perfluorinated  $C_1$  to  $C_8$ -alkyl group or perfluorinated aryl group and  $R$  is a  $C_1$  to  $C_8$ -alkyl group or aryl group
- $X, Y =$  each, independently of one another, N, P, O or S
- $n, m =$  an integer selected from 0, 1 or 2 in such a way that X, Y are each saturated in accordance with their valency increased by 1,
- $A'', B'' =$  saturated, partially or fully unsaturated 0- to 4-membered hydrocarbon chain,  
in which the carbon atoms may be replaced by identical or different heteroatoms selected from N, P, O and S,  
where at least one carbon atom is present in the chains  $A''$  and  $B''$  together and  
where the carbon atoms of the hydrocarbon chains  $A''$  and  $B''$  and the heteroatoms present therein are saturated by substituents  $R^2$  in accordance with their valency,
- $R^1, R^2, R^3 =$  -H, with the proviso that there is no bond to the positively charged heteroatom,  
straight-chain or branched alkyl having 1-20 carbon atoms  
straight-chain or branched alkenyl having 2-20 carbon atoms and one or more double bonds  
straight-chain or branched alkynyl having 2-20 carbon atoms and one or more triple bonds  
saturated, partially or fully unsaturated cycloalkyl having 3-7 carbon atoms  
halogen, in particular fluorine or chlorine, with the proviso that, for X, = N, O, S, there is no halogen-heteroatom bond,  
halogen, ~~in particular fluorine or chlorine~~, with the proviso that there is no halogen-heteroatom bond,

-NO<sub>2</sub>, with the proviso that there is no bond to a positively charged heteroatom,  
-CN, with the proviso that there is no bond to a positively charged heteroatom,

where the R<sup>1</sup>, R<sup>2</sup> and/or R<sup>3</sup> in different and/or identical position of the heterocyclic ring are in each case identical or different,

where the R<sup>1</sup>, R<sup>2</sup> and/or R<sup>3</sup> may be connected to one another in pairs by a single or double bond,

where one or more R<sup>1</sup>, R<sup>2</sup> and/or R<sup>3</sup> may be partially or fully substituted by halogens, in particular -F and/or -Cl, or partially by -CN or -NO<sub>2</sub>, with the proviso that not all R<sup>1</sup>, R<sup>2</sup> and R<sup>3</sup> are fully halogenated,

and where one or two carbon atoms of the R<sup>1</sup>, R<sup>2</sup> and/or R<sup>3</sup> may be replaced by heteroatoms and/or atomic groups selected from the group -O-, -C(O)-, C(O)O-, -S-, -S(O)-, -SO<sub>2</sub>-, -SO<sub>2</sub>O-, -N=, -P=, -NH-, -PH-, -NR'- and -PR'- where R' = non-, partially or perfluorinated C<sub>1</sub>- to C<sub>6</sub>-alkyl or -C<sub>6</sub>F<sub>5</sub>, where the  $\alpha$ -position of the R<sup>1</sup> is not replaced for X = O, S,

where the heterocyclic di-cation is a 4-, 5-, 6-, 7-, 8- or 9-membered ring.

13. (Previously presented) A process according to Claim 11, wherein the alkali metal fluoride employed is KF or RbF.

14. (Currently amended) A process according to Claim 11, wherein the reaction takes place at temperatures between -40°C and 80°C, ~~in particular at 0°C to 40°C.~~

15. (Previously presented) A process according to Claim 11, wherein the reaction takes place in a polar organic solvent selected from the group acetonitrile, dimethoxyethane, dimethylformamide and propionitrile.

16. (Currently amended) A process according to Claim 11, ~~characterised in that~~ wherein the reaction is carried out as a one-pot reaction.

17. (Previously presented) A process according to Claim 11, wherein the reaction for  $E^- = F^-$  is carried out without added alkali metal fluoride DF.
18. (Previously presented) A process according to Claim 11, wherein the starting materials for the reaction are employed in approximately equimolar ratio to one another.
19. (Previously presented) An ionic liquid comprising a salt according to Claim 1.
20. (Previously presented) A non-aqueous electrolyte comprising a salt according to Claim 1.
21. (Previously presented) A reagent for the introduction of  $N(CF_3)_2$  groups comprising a salt according to Claim 1.
22. (Previously presented) A phase-transfer catalyst comprising a salt according to Claim 1.
23. (Previously presented) An intermediate for the synthesis of liquid-crystal compounds or active ingredients comprising a salt according to Claim 1.
24. (Currently amended) A ~~medicaments~~ medicament or crop-protection agent comprising a salt according to claim 1.
25. (Previously presented) A salt according to claim 1, where one or more  $R^2$  and/or  $R^1$  may be partially or fully substituted by -F and/or -Cl.
26. ( Currently amended ) A salt according to claim 4, in which  $R^1$  or  $R^2$  are -CH<sub>3</sub>, -C<sub>2</sub>H<sub>5</sub>, -*n*-C<sub>3</sub>H<sub>7</sub>, -CH(CH<sub>3</sub>)<sub>2</sub>, -*n*-C<sub>4</sub>H<sub>9</sub>, -*n*-C<sub>6</sub>H<sub>13</sub>, ~~r~~ -CF<sub>3</sub>-CF<sub>3</sub>, -C<sub>2</sub>F<sub>5</sub>, or -C<sub>4</sub>F<sub>9</sub>.
27. (New) A process according to Claim 14, wherein the reaction takes place at temperatures between 0°C to 40°C.
28. (New) A salt according to Claim 1, which is at least partially miscible in water.